

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A process for manufacturing a thick-film circuit having at least one element on a titanium or titanium-alloy substrate to substantially prevent formation of a bent substrate comprising the steps of:

applying a glassy dielectric layer upon at least one surface of said substrate, the composition and layer thickness of which are selected according to its temperature coefficients and Young's modulus to substantially prevent bending of the substrate after it has cooled to ambient temperature; and

firing said glassy dielectric layer in an oxidizing atmosphere; and

forming at least one element ~~or more elements~~ of said thick-film circuit upon said dielectric layer; wherein the composition and layer thickness of the at least one element is selected according to its temperature coefficient and Young's modulus to substantially prevent bending of the substrate after it has cooled to ambient temperature.

2. (Previously Presented) The process as claimed in claim 1 wherein said thick-film circuit includes a hybrid circuit.

3. (Previously Presented) The process, as claimed in claim 1 wherein said glassy layer includes lead content, said method further including the step of diffusing the lead through titanium oxides on the or each surface of said substrate

to form a relatively strong bond between said substrate and the dielectric layer immediately adjacent to it.

4. (Previously Presented) The process as claimed in claim 1 further including the step of firing additional layers of similar or different dielectric material on top of the dielectric layer immediately adjacent said substrate.

5. (Canceled)

6. (Previously Presented) The process as claimed in claim 1 further including the step of placing a layer of dielectric material on a reverse side of said substrate to inhibit growth of oxide during said firing.

7. (Previously Presented) The process as claimed in claim 6, further including the step of removing the dielectric layer placed on the reverse side after at least some of the firing is complete.

8. (Canceled)

9. (Currently Amended) The process, as claimed in claim 1 further including the step of modifying temperatures of firing of ~~various~~ a plurality of layers to control bending of said thick-film circuit.

10. (Currently Amended) The process, as claimed in claim ~~1~~ 4 further including the step of arranging dielectric layers upon which the at least one element ~~or more elements~~ of said circuit is printed on said substrate, including layers that are ~~or may be~~ printed on top of the ~~or each~~ at least one element, to control temperature coefficient of resistivity of the ~~or each~~ at least one element.

11. (Currently Amended) The process as claimed in claim 10 wherein the ~~or each~~ at least one element includes one or more of a resistor, thermistor and a strain gauge.

12. (Previously Presented) The process, as claimed in claim 1 wherein said thick-film circuit includes a strain gauge, said method further including the steps of providing a plurality of different dielectric inks, adjusting relative concentration of said dielectric inks, and mixing the inks together before firing same to produce a layer or layers upon which said strain-gauge is printed and fired to control temperature coefficient of resistivity of said strain gauge.

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